WHAT IS CLAIMED IS:

1. A chemical vapor deposition process for depositing a tin oxide or a titanium oxide coating on a hot glass substrate comprising:

(a) pre-mixing a uniform precursor gas mixture consisting essentially of a metal tetrachloride and an organic oxygen-containing compound as the primary source of oxygen for formation of a metal oxide,

(b) delivering said precursor gas mixture at a temperature below the temperature at which the metal tetrachloride reacts with the organic oxygen-containing compound to form the metal oxide while delivering the mixture to a coater located adjacent a glass substrate, said glass substrate at a temperature above the thermal decomposition temperature of said organic oxygen-containing compound,

(c) introducing the precursor gas mixture into a vapor space opening on to the glass substrate whereby the mixture is heated to cause deposition of the metal oxide, incorporating oxygen from the organic oxygen-containing compound on the hot glass substrate,

(d) reacting the metal tetrachloride with the organic oxygen-containing compound to form the corresponding metal oxide on the hot glass substrate.

2. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 1, wherein said organic oxygen containing compound is an ester.

3. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 2, wherein said ester is an ester having an alkyl group with a ß hydrogen.

4. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 3, wherein said ester is selected from the group consisting of ethyl formate, ethyl acetate, ethyl propionate, isopropyl formate, isopropyl acetate, n-butyl acetate, and t-butyl acetate.

5. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 1, wherein the metal tetrachloride is selected from the group consisting of titanium tetrachloride and tin tetrachloride and said resulting metal oxide is tin oxide or titanium oxide.

6. A process for depositing a tin oxide or titanium oxide coating on a glass substrate as recited in claim 1, wherein the glass substrate is a float glass ribbon having a temperature in the range of about 1100°-1320°F/590°C-715°C.

7. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 1, wherein the metal tetrachloride in the precursor gas mixture is at a concentration of about 0.1-5.0% by volume.

8. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 1, wherein the organic oxygen containing compound in the precursor gas mixture is at a concentration of about 1 to 5 times the concentration of the metal tetrachloride.

9. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 3, wherein said ester is ethyl acetate and said glass substrate is a float glass ribbon.

10. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 5, wherein the glass substrate has a silica coating thereon, and said tin oxide or titanium oxide coating is deposited over the silica coating.

11. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 5, wherein a silicon coating is first deposited on said glass substrate, a silica coating is deposited on said silicon coating, and said tin or titanium oxide coating is deposited over the silica coating.

12. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 5, wherein said metal oxide coating has a refractive index greater than 2.4.

13. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 1, wherein the metal oxide coating has a residual carbon content less than 4 atomic percent.

14. A process for depositing a tin oxide or a titanium oxide coating on a glass substrate as recited in claim 1, wherein said precursor gas mixture includes helium as a carrier gas.

15. A process for depositing a tin oxide or a titanium oxide coating a glass substrate as recited in claim 2, wherein the ester has an alkyl group having 2-10 carbon atoms.

16. A process for depositing a tin oxide or a titanium oxide coating on hot flat glass as recited in claim 1, wherein the precursor gas mixture is caused to flow over the glass surface to be coated under laminar flow conditions.

17. A chemical vapor deposition process for depositing a titanium oxide coating on a substrate at high deposition rates of at least 130Å/sec, comprising:

(a) pre-mixing a uniform precursor gas mixture containing titanium tetrachloride and an ester, said ester having an alkyl group with a ß hydrogen;

(b) delivering said precursor gas mixture at a temperature below the thermal decomposition temperature of said ester to a location near a substrate to be coated, said substrate being at a temperature above the thermal decomposition temperature of said ester; and

(c) introducing said precursor gas mixture into a vapor space above said substrate wherein said ester thermally decomposes and thereby initiates a reaction with said titanium tetrachloride to produce a titanium oxide coating on said substrate.

18. A process for depositing a metal oxide coating on a substrate at high deposition rates as recited in claim 17, wherein said ester is selected from the group consisting of ethyl formate, ethyl acetate, ethyl propionate, isopropyl formate, isopropyl acetate, n-butyl acetate, and t-butyl acetate.

19. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein the metal tetrachloride has a concentration in the range of about 0.1-5.0 percent by volume of the precursor gas mixture.

20. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein said ester is ethyl acetate and said substrate is at temperature range of about 1100°-1250°F.

21. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein the metal tetrachloride has a concentration in the range of about 0.1-5.0 percent by volume of the precursor gas mixture and said ethyl acetate has a concentration of about 1 to 5 times the concentration of said titanium tetrachloride.

22. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein said ethyl acetate is at a concentration of about 1 to 3 times the concentration of said metal tetrachloride.

23. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein a silica coating is deposited onto said substrate prior to depositing the metal oxide coating.

24. A process for depositing a metal oxide coating on a substrate as recited in claim 23, wherein a silicon coating is deposited onto said float glass ribbon prior to depositing the silica coating.

25. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein said metal oxide coating has a refractive index grater than 2.4.

26. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein the metal oxide coating has a residual carbon content less than 4 atomic percent.

27. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein said precursor gas mixture includes helium as a carrier gas.

28. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein the alkyl group of said ester is a carbon compound having 2-10 carbon atoms.

29. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein the metal tetrachloride is selected from the group consisting of titanium tetrachloride and tin tetrachloride and said resulting metal oxide is tin oxide or titanium oxide.

30. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein said substrate is a float glass ribbon.

31. A process for depositing a metal oxide coating on a substrate as recited in claim 17, wherein a dopant is included in said precursor gas mixture to form a doped tin oxide coating.

32. A chemical vapor deposition process for depositing a titanium oxide coating on a float glass ribbon at high deposition rates of at least 130Å/sec comprising:

(a) pre-mixing a uniform precursor gas mixture containing titanium tetrachloride and an ester, said ester having an alkyl group with a ß hydrogen;

(b) delivering said precursor gas mixture at a temperature below the thermal decomposition temperature of said ester to a location near a float glass ribbon to be coated, said substrate being at a temperature range of about 1100-1320°F, said temperature range being above the thermal decomposition temperature of said ester; and

(c) introducing said precursor gas mixture into a vapor space above said float glass ribbon wherein said ester thermally decomposes and thereby initiates a reaction with said titanium tetrachloride to produce a titanium oxide coating on said float glass ribbon.

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